



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,790	02/25/2004	Hironori Kobayashi	CU-3608	3721
26530	7590	08/02/2007	EXAMINER	
LADAS & PARRY LLP 224 SOUTH MICHIGAN AVENUE SUITE 1600 CHICAGO, IL 60604			ANDERSON, JAMES D	
		ART UNIT		PAPER NUMBER
		1614		
		MAIL DATE	DELIVERY MODE	
		08/02/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/786,790	KOBAYASHI, HIRONORI
	Examiner	Art Unit
	James D. Anderson	1614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 19 July 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 and 6-21 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 5 is/are rejected.
- 7) Claim(s) 5 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1 sheet.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

Art Unit: 1614

CLAIMS 1-21 ARE PRESENTED FOR EXAMINATION

Election/Restrictions

Applicant's election without traverse of Group II (claim 5) in the reply filed on 7/19/2007 is acknowledged.

Claims 1-4 and 6-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on 7/19/2007.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

Receipt is acknowledged of the Information Disclosure Statement filed 4/12/2007. The Examiner has considered the cited reference to the extent that each is a proper citation. Please see the attached USPTO Form 1449.

Claim Objections

Claim 5 is objected to because of the following informalities: the word "sol" in line 2 appears to be a typographical error as the word "solution" is spelled out in line 3. Appropriate correction is required.

Art Unit: 1614

Specification

The disclosure is objected to because of the following informalities: the word "neural" is misspelled on page 21, third full paragraph. The correct spelling is "neutral" as found elsewhere in the specification and claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 112 (1st Paragraph)

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 5 is rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

This is a Written Description rejection.

Regarding the requirement for adequate written description of chemical entities, Applicant's attention is directed to the MPEP §2163. In particular, *Regents of the University of California v. Eli Lilly & Co.*, 119 F.3d 1559, 1568 (Fed. Cir. 1997), cert. denied, 523 U.S. 1089, 118 S. Ct. 1548 (1998), holds that an adequate written description requires a precise definition, such as by structure, formula, chemical name, or physical properties, "not a mere wish or plain for obtaining the claimed chemical invention." *Eli Lilly*, 119 F.3d at 1566. The Federal Circuit has adopted the standard set forth in the Patent and Trademark Office ("PTO") Guidelines for

Art Unit: 1614

Examination of Patent Applications under the 35 U.S.C. 112.I "Written Description"

Requirement ("Guidelines"), 66 Fed. Reg. 1099 (Jan. 5, 2001), which state that the written description requirement can be met by "showing that an invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics," including, *inter alia*, "functional characteristics when coupled with a known or disclosed correlation between function and structure..." *Enzo Biochem, Inc. v. Gen-Probe Inc.*, 296 F.3d 316, 1324-25 (Fed. Cir. 2002) (quoting *Guidelines*, 66 Fed. Reg. at 1106 (emphasis added)). Moreover, although *Eli Lilly* and *Enzo* were decided within the factual context of DNA sequences, this does not preclude extending the reasoning of those cases to chemical structures in general. *Univ. of Rochester v. G.D. Searle & Co.*, 249 Supp. 2d 216, 225 (W.D.N.Y. 2003).

Applicant has failed to provide any structural characteristics, chemical formula, name(s) or physical properties, aside from the express identification of alkyl silicates having the formula $\text{Si}_n\text{O}_{n-1}(\text{OR})_{2n+2}$ (wherein R is an alkyl group), that would provide adequate written description of the genus of compounds encompassed by "alkyl silicate" as recited in claim 5. Similarly, Applicant has failed to provide any structural characteristics, chemical formula, name(s) or physical properties, aside from the express identification of the specific fluoroalkylsilane chemical formulas shown at pages 18-19, that would provide adequate written description of the genus of compounds encompassed by "fluoroalkylsilane" as recited in claim 5.

Accordingly, it is not clear that Applicant was actually in possession of, and intended to be used within the context of the present invention, any other "alkyl silicate[s]" or "fluoroalkylsilane[s]" as broadly encompassed by the claims at the time of the present invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi *et al.* (EP 0 932 081 A1; Published July 28, 1999) (cited by Applicant in IDS filed 4/12/2007) in view of Yoichi *et al.* (JP 2000-053421; Published February 22, 2000) (cited by Applicant in IDS filed 4/12/2007).

The claim is drawn to a method of producing a coating solution for forming a wettability-varied pattern, comprising mixing a neutral solution of titanium oxide, which contains titanium oxide and alkyl silicate, with a solution of hydrolyzed fluoroalkylsilane, wherein the pH of the coating solution is in a range of 5 to 9.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Kobayashi *et al.* teach methods of varying the wettability of layers on a substrate comprising applying a photocatalyst material (page 31, ¶ [0286]). The photocatalyst material is preferably titanium oxide (page 31, ¶ [0288]). The photocatalyst-containing layer may also

Art Unit: 1614

contain a binder, preferably the instantly claimed polysiloxane containing a fluoroalkyl group, specifically hydrolysis condensates of fluoroalkylsilanes (page 32, ¶ [0295]). Use of polysiloxanes containing fluoroalkyl groups as the binder results in markedly improved water repellency and oil repellency of the photocatalyst-containing layer (page 33, ¶ [0296]). The Kobayashi *et al.* reference does not teach a solution of titanium dioxide containing an alkyl silicate or that the solution is at a neutral pH.

Yoichi *et al.* teach methods of preparing a titanium oxide solution having superior dispersibility in a neutral pH range (Abstract). A titanium oxide solution is mixed with an alkyl silicate as a dispersion stabilizer and the resultant mixture is neutralized to prepare the objective titanium oxide solution (*id.*). Such solutions are further taught to be useful as photocatalysts (¶ [0019]).

Thus, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of mixing titanium oxide and an alkyl silicate at a neutral pH as taught in Yoichi *et al.*, to improve the dispersibility of the titanium oxide-containing solutions of Kobayashi *et al.* The resulting coating solution would predictably have increased dispersibility at a neutral pH, which would clearly aid in applying said containing coating solutions to a substrate so as to induce varied wettability as taught in Kobayashi *et al.*

Art Unit: 1614

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Anderson whose telephone number is 571-272-9038. The examiner can normally be reached on MON-FRI 9:00 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on 571-272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



James D. Anderson
Patent Examiner
AU 1614

July 26, 2007



ARDIN H. MARSCHEL
SUPERVISORY PATENT EXAMINER